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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
In re the Application of

Yoshitaka SASAKI et al.

Application No.: 09/988,343

Filed: November 19, 2001

Docket No.: 111159

For: SLIDER OF THIN-FILM MAGNETIC HEAD AND METHOD OF  
MANUFACTURING SAME

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office  
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE SPECIFICATION:

Page 4, lines 4-10, delete current paragraph and insert therefor:

According to the manufacturing method, as shown in FIG. 34A and FIG. 34B, an insulating layer 102 made of alumina ( $Al_2O_3$ ), for example, is deposited to a thickness of about 5 to 10  $\mu m$  on a substrate 101 made of aluminum oxide and titanium carbide ( $Al_2O_3$ -TiC), for example. Next, on the insulating layer 102, a bottom shield layer 103 made of a magnetic material is formed for a reproducing head.

Page 25, lines 17-25, delete current paragraph and insert therefor:

The air bearing surface 30 has first parts 31 closer to the air outflow end 42, second parts 32 closer to the air inflow end 41, and border parts 33 each located between the first and second parts 31 and 32. The first parts 31 lie in parallel to the surface of the slider main body 21 opposite to the air bearing surface 30. The second parts 32 are slanted against the first parts 31 so that the entire air bearing surface 30 has a convex shape (roof shape) bent at the border parts 33. A first part 31 and a second part 32 preferably form an angle  $\theta$  of no greater than  $30^\circ$ .



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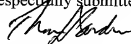
Page 62, line 23 to page 63, line 12, delete current paragraph and insert therefor:

In the method of manufacturing a slider of a thin-film magnetic head of the invention, the portion to be the slider main body may include: a substrate portion that has a surface facing toward the recording medium and makes a base of the thin-film magnetic head element; and an insulating portion that has a surface facing toward the recording medium and surrounds the thin-film magnetic head element. The surface of the insulating portion facing toward the recording medium may be located farther from the recording medium than a part of the surface of the substrate portion facing toward the recording medium is, the part being adjacent to the surface of the insulating portion facing toward the recording medium. In this case, a significant reduction in magnetic space is achieved by putting a portion of the first part of the medium facing surface, the portion belonging to the substrate portion, into contact with the surface of the recording medium.

#### REMARKS

The attached Appendix includes marked-up copies of each rewritten paragraph (37 C.F.R. §1.121(b)(1)(iii)).

Respectfully submitted,



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JAO:TJP/mlb  
Attached: Appendix  
Date: March 12, 2002

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## APPENDIX

## Changes to Specification:

Page 4, lines 4-10:

According to the manufacturing method, as shown in FIG. 34A and FIG. 3437B, an insulating layer 102 made of alumina ( $\text{Al}_2\text{O}_3$ ), for example, is deposited to a thickness of about 5 to 10  $\mu\text{m}$  on a substrate 101 made of aluminum oxide and titanium carbide ( $\text{Al}_2\text{O}_3\text{-TiC}$ ), for example. Next, on the insulating layer 102, a bottom shield layer 103 made of a magnetic material is formed for a reproducing head.

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In the method of manufacturing a slider of a thin-film magnetic head of the invention, the portion to be the slider main body may include: a substrate portion that has a surface facing toward the recording medium and makes a base of the thin-film magnetic head element; and an insulating portion that has a surface facing toward the recording medium and surrounds the thin-film magnetic head element. The surface of the insulating portion facing toward the recording medium may be located farther from the recording medium than a part of the surface of the substrate portion facing toward the recording medium is, the part being adjacent to the surface of the insulating portion facing toward the recording medium. In this

